

REMARKS:

Claims 3-28 are in the case and presented for consideration.

Claims 3, 4, 8, 9, 10, 11 and 14 have been rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent 4,824,732 to Hendry et al (Hendry). Claims 5, 6, 7, 12, 13 and 14 have been rejected under 35 U.S.C. §103 as being obvious either from a combination of Hendry and U.S. Patent 5,814,353 to Nagel or from a combination of Hendry and U.S. Patent 5,223,278 to Nicetto.

Claim 3 has been amended to call for a variable speed motor for driving a constant delivery pump of the invention. New independent claims 15 calls for a motor driven regulating pump with adjustable throttle for regulating delivery flow of liquid for the invention. New independent claim 22, a method claim but drawn to the same invention, calls for either speed control or stroke volume control for the liquid, and, importantly, the liquid flowing through the motor driven pump during introduction of the liquid. A set of dependent claims for each independent claim is also submitted.

Independent claims 3 and 15 define a combination with specific types of pumps not found in, or obvious from, Hendry alone or combined with the secondary references. Claims 4-14 and 16-21 distinguish the invention even further from the prior art. Claims 3-21 are therefore believed to be in condition for allowance.

Consideration of method claims 22-28 is also respectfully requested.

According to the teaching of Hendry, all of the liquid to be introduced into the molten plastic material has to be stored in the volumetric metering piston 20 (Fig. 1 of Hendry) prior to the introduction of the liquid. Therefore, in Hendry, it is necessary to specify the exact volume of the liquid prior to its introduction into the molten plastic material. Unless the volume of the liquid is metered as accurately as possible, the core formed by the liquid

will be subject to considerable fluctuation in size according to the Hendry teaching.

The method of claim 22 solves this problem by regulating the delivery flow of the liquid instead of the total liquid volume. In this way, the liquid core is formed automatically with a size which is as large as possible, as is desired for the invention (and for Hendry).

Also, since Hendry discloses a "single-shot" device, once the metering piston 20 of Hendry has reached its terminal position, no more liquid can be introduced into the mold until the piston has been reset and new liquid has been stored. In the meantime, the liquid that is already in the molten plastic material of Hendry is heated by the surrounding plastic material which cools by a corresponding amount. Hendry, thus, cannot hold the plastic material at a desired temperature until the end of a hardening phase of the injection molding process. This leads to injection-molded products of inferior quality.

The secondary references provide no reason for changing Hendry to reach the claimed invention, nor would Hendry alone be sufficient to teach those of ordinary skill in this art to abandon the single-shot apparatus and method for the apparatus and method of the present invention.

Accordingly, the application and claims are believed to be in condition for allowance, and favorable action is respectfully requested.

If any issues remain which may be resolved by telephone, the Examiner is respectfully invited to contact the undersigned to advance the application to allowance.

Respectfully submitted,



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